

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
YELLOWSTONE NATIONAL PARK
YELLOWSTONE PARK, WYO.

OF THE SUPERINTENDENT

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MONTHLY REPORT

for

N o v e m b e r ,

1919.



(10)

December 8, 1919.

The Director,
National Park Service,
Department of the Interior,
Washington, D. C.

Sir:

The following is my report on conditions in Yellowstone National Park and on the operation of the park for the month of November, 1919.

GENERAL CONDITIONS:

The extreme weather conditions that characterized October as a record breaking month continued with somewhat less severity during the first two weeks of November. Following this period there were ten days of bright, pleasant weather, with temperature above normal, causing a moderate daily increase in the snow covering, until the 24th, an average of 3.3 inches remained on the ground, while exposed places were entirely free from snow. A storm period began on the afternoon of the 28th and snow fell continuously, except for brief intervals, until the afternoon of December 2d, producing 10.7 inches of snow with a maximum depth of 13.0 on the ground. The monthly mean temperature of 23.2 degrees with a departure of -6.1 degrees represents the coldest November in 32 years with the exception of 1896 and 1911. The minimum temperature of -19 degrees on the 27th has not been exceeded but twice in November during the period of record, -27 degrees being recorded in 1896 and -20 degrees in 1916. There were seven days with temperature below zero. The greatest number previously recorded was 5 in 1911, while the average November has only 2 days with zero temperature. The precipitation was light, there being less than the normal amount of snowfall, but the number of days on which a measurable amount of snow fell was considerably above the normal. The wind and the sunshine were about the average for November. The excessive cold and storms of October, and cold of November, coming so early, seemed to represent a greater amount of real

winter than did the whole season of 1918-19; and it certainly caused more inconvenience and suffering to everyone and everything in and around the park than did all of last winter.

Travel.

The only road in the park which was practicable for motor transportation during the month was the five miles between Mammoth and the northern entrance. The road to Norris and Canyon was kept open for sleighs, but at times with considerable effort, and except for the fact that the concessioners were making improvements at Canyon and Lake and were maintaining crews of men there, and that winter supplies had not been taken out for rangers and keepers, this would not have been considered worth the effort. The last sleigh to the Lake went out with rations for the winter, reaching there on November 5, returning to the Canyon the following day. The road as far as Canyon is still in use by Mr. Whittaker for hauling building material with sleighs, and he was permitted to place small limbs of trees on the bare places for about a mile in the vicinity of Norris Basin, so the sleighs would slip. The road to Tower Falls, Soda Butte and Cooke, was open for sleighs throughout the month.

Visitors to the park were few, as will be noted by the inclosed copy of the Chief Ranger's Report. Those that registered only came as far as Mammoth Hot Springs, to see the wild animals or on business.

Labor and supply market.

There was no demand for labor in the park, as all improvement work under this office stopped in October, and the concessioners who were making improvements for next year had all the men they needed. Supplies, such as building material, lumber, etc., used by the concessioners for improvements to buildings, were scarce and high priced. Coal, for winter use, was also scarce, and recently not in market at all, due to strike of coal miners. Alfalfa hay needed for feeding wild animals is limited in supply, and high in price. About 380 tons were purchased during the month, at \$25 per ton in the stack.

II. PERSONNEL.

Employees.

On November 1st there were 60 employees under this office; on November 30th there were 57. Below is given a list of the number of various classes of employees serving under appointment, with general statement of the kind of work performed by each class:

<u>No.</u>	<u>Class.</u>	<u>Kind of work performed.</u>
1	Asst. Engr.	Office engineering.
1	Blacksmith	General blacksmith work.
5	Clerks	1 Disbursing Agent and purchasing clerk; 1 on orders, proposals, and vouchers; 1 stenographer, files and revenues; 1 on payrolls and timekeeping; 1 on cost accounting and in charge of storehouse.
1	Steward & Master Transportation	In charge of all transportation.
3	Electricians	1 in charge of power plant; 2 assistants in power plant.
1	Buffalo Keeper	In charge of tame buffalo herd.
1	Asst. Bflo. Kpr.	Assisting buffalo keeper.
2	Foreman	1 in charge of all engineering work in park under direction of Superintendent; 1 in charge of stables.
1	Gen. Foreman	In charge of construction crew.
1	Handyman	Work in commissary, rationing crews, etc.
1	Lineman	In charge of telephone system; did emergency work and installed instruments.
1	Watchman	Watchman at Headquarters.
1	Master Mechanic	In charge of shops.

<u>No.</u>	<u>Class.</u>	<u>Kind of work performed.</u>
1	Mechanic	In charge of auto and truck repairs.
1	Plumber	In charge of general plumbing at Headquarters.
1	Painter	In charge of general painting at Headquarters.
1	Telegraph Opr.	Telegraph operator and general office work.
1	Telephone Opr.	Telephone switchboard operator.
1	Laborer	Miscellaneous work at Headquarters.
28	Rangers	In charge of stations; on duty in Chief Ranger's office; patrol duty; feeding wild animals.

In addition to the regular employees mentioned above, the following list of temporary laborers, teamsters, etc., were employed:

	<u>On Nov. 1.</u>	<u>On Nov. 30.</u>
Special laborers	1	0
Carpenters	1	0
Engineman	1	1
Teamster	1	1
Laborer	<u>1</u>	<u>1</u>
	<u>5</u>	<u>2</u>

Leaves of absence.

During November annual leave was granted as follows:

L. M. Mac Rae, clerk, 10 to noon of 13, $3\frac{1}{2}$ days.

J. B. Small, general foreman, 1 to noon of 6, $4\frac{1}{2}$ days.

A. R. Edwin, clerk, 17 to noon of 20; $3\frac{1}{2}$ days.

J. P. Brooks, Asst. Chief Ranger, 24 to 30; 5 days.

George T. Dastman, park ranger, 28 to 30; 2 days.

William Wiggins, plumber, 19 to 20; 2 days.

William A. Kelley, assistant buffalo keeper, noon
25 to 30; 3½ days.

Appointments.

The following appointments became effective during the month of November:

William A. Kelley, assistant buffalo keeper, \$900 per annum, 1st.
Ralph V. Harr, park ranger, \$1200 per annum, 1st.
Thomas Farrell, watchman, \$900 per annum, 1st.
Dean M. Hausman, park ranger, \$1200 per annum, W. A. E., 3rd.
Emmet S. Matthew, park ranger, \$1200 per annum, W. A. E., 3rd.
Hollis N. Matthew, park ranger, \$1200 per annum, W. A. E., 3rd.
Clyde E. Roney, park Ranger, \$1200 per annum, W. A. E., 4th.

Separations.

The following separations took effect during November:

John L. Cooper, auto mechanic, close of 4th.
August C. Neumann, painter, close of 30th.

Vacancies.

No vacancies existed in the regular force at the close of November.

The present force of 57 employees, with a pay roll of about \$6,500.00 monthly, is practically on a winter basis, and is about as small as it can be made without detriment to the service.

W. A. E. appointments were received for nine rangers for next summer's service, with the understanding that they are not likely to be called into service before the opening of next tourist season. These are all men who were employed last summer as temporary rangers and who gave excellent satisfaction in that capacity.

III. WORK COMPLETED.

(a) Construction of Physical Improvements.

Everything being on a winter basis, no construction work of any kind was attempted during the month.

(b) Maintenance and Repair of Physical Improvements.

No road maintenance was done during the month of November, with the exception of removing the loose rock from the Gardiner Canyon road.

The regular shop force is engaged in placing all equipment under cover and repairing same. One man is remodeling the interior of the frame stable No. 47, and placing 15 doors on the west side to accommodate the storage of 60 machines, as wagons, graders, trucks, etc. This work is 65% completed.

The work of making repairs to the quarters occupied by Chief Ranger McBride was completed mostly by regular employees. The water system was remodeled by tapping the main and bringing the water directly to the quarters instead of through another house. A bath room with tub and toilet were installed. A partition was moved and stairway changed and improved, and plastering that was spoiled was replaced, and paint touched up where damage or new work occurred.

(c) Miscellaneous Improvement work.

Nine snowshoe cabins in various parts of the park were supplied with rations and necessary blankets and cooking utensils, for winter use. To accomplish this a boat was used between Lake Outlet and the Upper Yellowstone for the cabins in the southeast corner, as the snow was too deep for pack animals. Rations for similar use were also placed in the ranger stations at Norris, Canyon and Thumb, which are not garrisoned in winter.

Improvements by Concessioners.

The Yellowstone Park Camping Company withdrew most of its crews at the end of October, and practically abandoned its extensive construction and improvements at its camps, until next spring, on account of the early setting in of winter. A small crew was retained under Evans at Roosevelt Camp, near Tower Falls, getting out logs and making preparations for a new central building there.

The Yellowstone Park Hotel Company continued work on its new dormitory for girls at Grand Canyon until November 15th, when the crews were brought in and laid off. The building was entirely enclosed before being left; roof boards on but not shingled.

The Yellowstone Park Transportation Company continued the work of improving the cornice of one of the big storage garages at Mammoth, and this work was nearly completed at the end of the month. Another of the large storage buildings at Mammoth is being remodeled for a shop building for repairing automobiles, by addition of several windows on the west side, installing seven pits, necessary machinery, etc. This work is still in progress.

Mechanics are still at work overhauling the big White cars used by this company for transportation of tourists, and they are also being painted.

George Whittaker is the only concessioner in the park who was not completely discouraged by the early approach of winter. He continued his work of building a new store at Grand Canyon. The plans of his new log building have been approved, and he has made good progress in getting it up. The log walls are completed and the rafters and roof boards are on. He still has men at work and proposes to finish shingling the roof before he stops, realizing that the difficulties are likely to be greater in getting in with any kind of transportation next spring than they are now. He still has heavy teams freighting his supplies in to Grand Canyon. Mr. Whittaker has put in most of his own time on this work.

C. A. Hamilton finally managed to get transportation to bring his construction crew in from the Lake, and they arrived at Mammoth on November 6. Mr. Hamilton has left the park for the winter.

The Park Curio Shop. Mesdames Anna K. Fryor and Elizabeth Trischman, owners of the Curio Shop and ice cream parlors at Mammoth, had some minor alterations and repairs made to their building, but did not finish them due to interference of cold weather.

(d) Service to the Public.

As shown by the inclosed copy of the Chief Ranger's Report, the travel into the park during November was unimportant.

The total number was 4 in 2 automobiles from the north. No one entered the park from the west, south, or east entrances during the month.

IV. WORK IN PROGRESS.

The work still in progress by concessioners is indicated above, under Paragraph III.

The work of remodeling the large wooden stable, immediately south of the stone stable used as a machine shop, is still progressing and it promises to make an excellent storehouse for wagons, trailers, wheel scrapers, road graders, and other similar equipment. This work is completed to the extent that many of the vehicles and pieces of machinery that have for years been stored out-of-doors, have been placed inside, and it is expected that practically everything will be housed before the end of December.

The work of moving the commissary and other storehouses from the north to the old military storehouses at the south end of the plaza, made good progress during the month, and will be completed soon.

The ranger force has been busy along the north line of the park, patrolling to see that the many hunters keep on the outside; also in feeding the alfalfa hay to elk and other wild animals. Both the patrols and the feeding have to be kept up constantly, every day, including Sundays.

A watchman has been employed since November 1st and has made hourly patrols at night as a safeguard against fire among the many buildings at Headquarters.

Ranger Skinner made considerable progress in collecting specimens and preparing them for the proposed museum. Both geological specimens and a few animals and birds were procured.

Mr. Skinner also put in considerable time going over the Information Circular for 1919, with a view to making suggestions for corrections for the next edition.

V. WORK BEGUN.

No new work was begun during the month.

VI. PLANS OR PROPOSED WORK.

During the month of December it is proposed to remodel an old wooden building located southeast of the stone garage, into an adequate paint shop to replace the very small one now in use. This can be accomplished by labor of the painter with some little help from other regular employees.

Remodel one end of a storehouse now in use as a grain shed, for use as an ice house, and put up a year's supply of ice provided it freezes thick enough to harvest before the end of the month.

It is also proposed to continue the important work now in progress of remodeling the old stable for a storehouse for vehicles and construction machinery; repairing machines, tools, equipment, wagons, etc., in the shops and garage; changing the location of stores from the houses at the north end to the new ones selected at the south end of the grounds; feeding hay to the elk and other wild animals; also to buffalo and surplus horses at the Lamar River buffalo farm and on Slough Creek; and the most important work of making regular patrols from stations, and special patrols on the north line near Gardiner where the hunters are congregated in considerable numbers.

VII. POLICIES.

No new policies were adopted during the month.

VIII. COST OF OPERATION.

Cost reports for the month of November are inclosed. As will be noted, these monthly expenses consist principally of the salaries of regular employees on the lowest winter basis.

With our very large plant and large accumulation of property to care for, a smaller force would be entirely inadequate to do the actual work necessary. The work of putting equipment in shape for another season serves to keep employed some of our most valuable men, who would not care to remain with the Service were they employed only temporary, and some of it can be done now to a much better advantage than it could next spring, just before the field work started. The unusual conditions of range, weather and hunting, necessitating the feeding of large quantities of hay to the wild animals, throws a very large amount of work upon the ranger force. Regular routing work, and catching up the work that

naturally falls behind during the busy summer season, keeps the reduced office force busy from 8:30 A. M. to 5:30 P. M. daily except Sundays.

Our entire force is reduced to the extent that those remaining are frequently called upon to perform necessary work that is not at all in their line - for instance, the lineman drives a light truck hauling supplies from the railroad three times a week; the office force keeps the furnace going during the day, and took two hours off and washed and adjusted the storm windows recently; the telegraph operator takes the place of one of the telephone switchboard operators in addition to his telegraphic work; the general foreman is doing the work of a carpenter in remodeling buildings, etc.

IX. OTHER MATTERS OF INTEREST.

Wild Animals.

On account of the lack of forage on the range, and the exceptional winter conditions, the elk and deer continued to leave the park during November; the tame buffalo showed a very strong tendency to go to lower grounds and gave much trouble by breaking away from their range on Lamar River and drifting in to Mammoth Hot Springs and Gardiner; and the whole tendency of all wild animals seemed to be to go down. As time advances, and winter conditions still are rigorous, the absolute necessity for securing more hay for the elk, deer, antelope and mountain sheep, is more apparent. Through the kindness of the officials of the Hill-McClelland Cattle Corporation, which is a large and wealthy company with heavy holdings in land, cattle, etc., in the Yellowstone Valley just north of the park, we did manage to procure 369 tons additional of alfalfa hay in stack close by enough so it can be hauled without baling, and were also able to allot about 100 tons of the hay put up on Slough Creek for use of elk that have drifted in there, so there are available over 1100 tons of hay for feeding game, less what has been fed to date, which relieves the situation to some extent. But still the prospects look poor for bringing through the herds of elk we have begun to feed, and I am convinced that 300 to 500 tons additional of alfalfa hay will be sadly needed before spring. Whether it can be procured in the market, and whether funds can be procured by deficiency appropriation to buy it in case it can be procured, is a question.

Buffalo, wild herd. No report was received of the wild herd of buffalo during the month of November.

Buffalo, tame herd. At the end of October this herd numbered 414 animals. A three-year-old bull was shipped by express to the City of St. Louis on November 19, under your authority dated September 24, 1919, leaving 413 animals now in the herd. Like the wild animals in the park, this herd has been very uneasy since the bad weather began, and many of them have succeeded in breaking away from the range and farm several times, and going north, 20 to 40 of them landing at Mammoth on several occasions. As the hay at the farm for winter use is none too plentiful for the large herd for a long winter, it was desirable to keep them on the grazing as late as possible. Finally, on November 15th, the bulk of the herd was taken to Slough Creek, where hay was put up last summer, and fed there until the end of the month, so as to augment the supply at the farm which is now being utilized to feed them. The calves were separated from their mother and corralled at the farm where they are being fed hay. Eighty calves and seventy of the cows were fed, taking about 1500 pounds of hay a day. Some of the bulls that broke away from the herd went as far as Grevice Mountain, and one of them even went to Gardiner and was found outside of the park and was returned to the herd. Several of the older animals are becoming dangerous, and it will be necessary to kill them to prevent loss of life and property. A stray bull at Tower Falls Station gored the ranger's horse quite severely on November 8th. Another gored one of our saddle horses at Mammoth a few days later. In both of these cases the wounds were in the flesh only, and the horses recovered; but on November 16th one of the old team horses at the farm was gored by a bull so badly that he had to be killed at once to prevent suffering. Fortunately, this was an old and unserviceable horse, and the loss was nil.

Bears. The bears evidently all hibernated before the end of October, as there was no report of any having been seen, nor of their depredations.

Antelope. Our small antelope herd, the most valuable of any of our species of wild animals, was most uneasy on account of the severe weather, and, like the elk, wanted to go down the river. But, fortunately, their range in winter is almost entirely along the high wire fence, and careful patrols were made daily, to keep the fence in repair so they would not escape. About 25 to 30 of them did succeed in getting on the outside of the fence early in November, and it was several days before they could be returned to the park. They were fed hay separately from the elk, in a corral prepared with the idea that elk could not get in, but the antelope being smaller can get underneath the fence which is left high enough from the ground for this purpose. This corral is

located just inside the park line fence, and about a mile west from Gardiner. About 250 antelope were fed during the month, the balance being scattered in the foothills between Mammoth and Sepulchre Mountain, and on Mount Everts.

Deer. The deer remained scattered during the month. A few were fed with the elk in the vicinity of Gardiner, and a few around the barns at Headquarters. Quite a number were killed by hunters outside of the park. The open season in Montana expired with November 30.

Elk. The prediction that our northern herd of elk, which for several years has numbered twenty to thirty thousand and which is the largest and finest herd in the world, would be in grave peril this winter due to shortage of grass on the range, is being rapidly fulfilled. Ever since they came down to the winter range on account of the storm of October 22, they have been uneasy and hard to manage. While we have made every effort to hold these herds inside of the boundaries of the park, by feeding and herding them back along the line in some cases, the facts are that many thousands have left the park to this date.

The State of Montana extended its open season in Park County to an unreasonable extent (December 25) because it happened that there was no bad weather to drive the elk out of the park so as to make good hunting, until after the season closed last year, and but few got their winter's meat. This fact, coupled with the early winter, has resulted in a slaughter that is only rivalled by the stories of the "old timers" of the slaughter of buffalo on the plains in the early days. Hunters come in numbers on every daily train, and the outgoing trains are loaded with hunters and dead elk, which are shipped by express and which have required extra cars to handle nearly every day since the slaughter began, the latter part of October. The residents of Gardiner and the ranchers for twenty miles down the Yellowstone Valley, are reaping a rich harvest, as trucks, automobiles, teams, and even saddle and pack animals (for occasionally a real sportsman comes along who is desirous of going to the mountains for his elk instead of shooting it from an automobile) are in great demand for hauling hunters out and hauling elk carcasses in to the depot. Good money is also made boarding the hunters, and some of them even pay for a guide rather than to take a chance of getting over the park line, or on the wrong side of the Yellowstone River into the Montana State Game Preserve. The crowds are composed of men of all types and professions - farmers, lawyers, doctors, merchants, etc., and frequently women hunters are also in the field. Some of

them have to be told which end of the gun to load, and the difference between an elk and deer; and the story has recently been told, though not vouched for, that one man shot a stray mule, and had it skinned and one foot cut off before a kind-hearted neighbor came along and told him it wasn't an elk. A popular method of hunting is for a number of hunters to lie in wait until a band of elk, consisting of mothers with last year's calves, spike bulls, and occasionally an old bull with them, comes across the park line, then they surround the band of innocent animals which are so tame that they will follow a team looking for hay, and shoot promiscuously into the bunch until they all drop or a few sometimes get away badly wounded, then each member who participates in the fusillade claims an elk, or two if he had paid for special license for the second one. I have not witnessed this personally, but have been told of these methods by two or three people who claimed they had seen it. Chief Ranger McBride estimates that about 3500 elk have been killed along the north boundary since the season opened. He bases his estimate upon such data as he can get from the Express company, and other information he can pick up among the hunters. That many elk are wounded and not taken is shown by the fact that about 50 have been known to stray back to their home in the park and die, and of course there are probably several times as many wounded that have not died, or not been found.

Protection of Elk outside of the Park. The State Game Warden of Montana has several deputies stationed in the vicinity of the hunting grounds to see that the state laws are not violated, and I understand has made a few arrests for killing in the game preserve, without proper license, and for other reasons illegally. But failure to comply with the state laws is simply through ignorance, as they are broad enough so any one can get an elk within the law, with but little difficulty, and it now looks as if the slaughter would keep up until the last day of the season, as the weather continues severe, and elk are still leaving the park quite frequently in considerable numbers.

The United States Forest Service has finally secured its appropriation to carry on its work, and has made arrangements to establish two or three stations in the Absaroka National Forest with patrols over the territory where game is found, with a view to enforcing the State Game Laws. District Forester Rutledge of Missoula, two of his assistants, and the Supervisor of the Absaroka National Forest, spent several days on the ground about the middle of the month, working up this plan of protection and considering the problem of caring for the elk herds outside of the

park, and other members of his staff have visited the district at different times in the same connection. I can see no reason why the elk should not be well protected outside of the park after the open season is over, so far as their being hunted is concerned, but this does not solve their question of food, which is the most important this year. It is conceded that there is nothing for them on the range outside, and I have heard of no plans of the Forest Service to purchase hay for them.

Feeding of hay to Elk and other animals in the Park.

All the alfalfa hay available in stack near enough to the park so it can be hauled without the expense of baling, has been purchased at a price of \$25 and \$26 per ton in stack. Also 131 tons of baled alfalfa was bought for the same purpose, at a cost of approximately \$34 per ton, F. O. B. Gardiner. On November 22 there was in all, including hay cut in the park and reserved for game, and about a hundred tons left over from last year, a total of about 1165 tons for feeding elk, deer, antelope, and mountain sheep. Under normal weather conditions, it has not usually been found necessary to begin feeding hay at all until about December 1st, but this year we were forced to begin in October, soon after the heavy snowstorm of the 20th, to hold the elk and antelope from leaving the park. It seems that even some of those being fed go out, for alfalfa hay has been found on several occasions in the stomachs of those killed outside. During November the average daily feed was seven tons, or a total of about 210 tons fed to the herds in the vicinity of Gardiner, and this hay was being taken by a total of about 250 antelope, and herds of elk totalling from three to five thousand head, varying on different days according to the condition of the weather. The feeding of this hay to the northern herd required the services of three teams and two trucks, most of the month. The labor was all performed by park rangers, including the driving of teams and trucks. In addition to this, eighteen hundred or two thousand elk drifted in to Upper Slough Creek, where hay was put up last summer, and 75 tons were fed to them there. Here the feeding was done by the teamster in charge of our horse herd.

These by no means represent all of the elk remaining in the park. The rangers on Grevice Mountain report a band of about eight hundred still on Grevice Creek; there are still many on Blacktail and that part of the Yellowstone River near the mouth of Blacktail, and several hundred in the vicinity of Mammoth. It is apparent that the feeding of hay has been successful in holding thus far quite as many elk as we can provide hay for this winter. The great question is, have we on hand or can we procure if needed, sufficient hay to feed what we have managed to retain?

The amount needed will of course depend largely upon the severity of the winter. But all records are being broken for cold and snow, and it now seems almost inevitable that more hay will be badly needed before spring, and in my opinion every effort should be made to try and get hold of from 200 to 500 tons additional of alfalfa. As the nearby market is exhausted, this will have to be baled and shipped in from some distance, and I am still making, and shall continue to make, inquiries as to a source of supply, with a view to asking for additional deficiency funds if the hay can be procured.

Gallatin herd of Elk. From best information obtainable to date, the hunters who went to the locality near the northwest corner of the park to do their hunting were none too successful, though it is understood a few - possibly a hundred - got their elk. But most hunters nowadays travel in automobiles, and the storm of October 22d filled the roads to the West Gallatin so those already there had much difficulty and expense getting out through the drifts, and but few went in after that time. Even the residents of Gallatin County found it surer and cheaper to come to Gardiner by rail for their elk, where they were certain of getting one with but little trouble and expense. This same storm drove practically all of the small Gallatin herd out of the park, and it is now on the regular winter range down the Gallatin, which I am informed is good compared to most other ranges. The open season on the West Gallatin closed at the end of October.

Southern elk herd. Information from Jackson Hole early in November indicated that the elk were already on the feeding grounds, and that the situation looked even worse than it does at this end of the park. Mr. D. C. Nowlin, the representative of the United States Biological Survey, who is in charge of the farm raising hay for feeding elk, states that the migration of elk to winter feeding grounds was the earliest he had ever known. The few reports received indicate that but few elk were killed by hunters in Jackson Hole during the open season.

To this date it can hardly be said that our elk have suffered for want of food, and what we have retained are in excellent condition. Those contemplating transplanting them to other ranges, or securing them for public parks, have been urged to make arrangements to do so at the earliest practicable date, so as to get them while they are in good condition, and also to conserve what forage we have for the remainder.

An unusual drift of elk from the northern herd was noted

early in November. Several hundred elk came into the park down the Cooke City road, and inquiry revealed the fact that they had entered this road from the south, within a mile or two of the park line, and it is believed that they were a part of the herd that summers in the mountains east of the park, and usually return to their winter feeding ground in the park down Cache Creek; but they had been cut off from their usual passes by the early storms and were seeking their winter feeding ground by a more circuitous route. The result was of course, that the few residents of Cooke City got their winter meat with very little difficulty, but there was no evidence of any violation of law, and the slaughter was not large. Most of these elk found their way into the park and are still in the vicinity of Soda Butte and the northeast corner.

Mountain Sheep. A few mountain sheep were seen daily in the canyon between Headquarters and the north boundary. They are in excellent condition.

Moose. Reports from Riverside and Gallatin Stations indicate a fair increase in the number of moose seen.

Carnivorous animals. Several reports have been received of the presence of wolves, and coyotes are seen and heard daily wherever there is any game. But up to this time the extra work of patrolling the park lines and feeding the elk have seemed more important than anything else, and no rangers were available to hunt carnivorous animals.

Grazing.

Grazing has been fairly good on Blacktail and in the vicinity of Headquarters, and such elk and deer as have remained on these ranges have seemed to get enough to eat. No domestic stock except a few of our surplus horses, were grazed in the park during November.

Birds.

Quite a few varieties of winter birds are in evidence. An unusual number of ducks have been noted as wintering on Gardiner River below the mouth of Boiling River, and some of the other warm pools in the vicinity of Headquarters.

Fish.

The only fishing indulged in was in Gardiner River, by a few of our residents, who occasionally succeeded in landing a

few trout.

Protection of Game.

In addition to the regular winter patrols from all park stations, special intensive patrols have been necessary during the month for several miles along the north line of the park near the northern entrance, where the slaughter of elk is going on outside. Several arrests were made as a result, of parties not familiar with the country, who were either misinformed as to the location of the park line, or were careless of it.

Arrests and violations of the Law.

Arrests by the ranger force, with result of trials before the United States Commissioner, were as follows:

November 10. Chief Ranger McBride arrested R. C. Redlich, of Butte, Montana, hunting in the park. He plead guilty to the charge before the United States Commissioner, and paid his fine of \$25 and costs.

November 26. Ranger Bert Reese arrested Louis Larsen and Harvey Halverson, both of Rapelfja, Montana, for killing an elk in the park. They plead guilty and were fined \$50 each and costs, and made to forfeit their rifles to the United States.

November 13. Ranger Bert Reese arrested Gilbert Egli, of Egal, Montana, hunting in the park. He plead guilty and was fined \$25 and costs, which he paid.

Forest Fires.

No fires of any sort happened in the park during the month of November.

Special Visitors.

No special visitors were seen during the month, except two Montana Deputy Game Wardens, and two forest rangers on another occasion, all of whom were interested in co-operation in the protection of game outside of the park.

Miscellaneous.

Picture shows were held every Saturday night, beginning November 15, at the Post Exchange, under co-operative arrangements between the regular park residents and the residents of Gardiner.

Church services were held every Sunday in the Chapel.

Mr. Horace M. Albright, the Park Superintendent, has been absent from the park since November 9, on duty at the National Parks Conference in Denver, and since in Washington, D. C.

X. RECEIPTS AND REMITTANCES.

The usual report of monies collected, due and transmitted, together with money orders and checks totaling \$38.45, as called for by forms 10-59 and 10-60, is inclosed. Please acknowledge receipt.

There is also inclosed a copy of the Monthly Meteorological Summary for the month of November.

Cordially yours,

CHESTER A LINDSLEY

Acting Superintendent.

(In duplicate)

Inclosures:

CAL:JRM